

DOE/OE Transmission Reliability Program

Curated Power Grid Data Center

Mark Rice

Pacific Northwest National Laboratory

mark.rice@pnnl.gov

June 10-11, 2015

Washington, DC



Curated Power Grid Data

- Power grid data repository (PGDR) will provide researchers and developers with access to **fully-curated** data sets with **known data quality** handled in an automated process using well-tested and **well-documented** algorithms.
- The PGDR will provide a flexible web portal and workbench for users:
 - Explore the data
 - Create suitable subsets
 - Download data to local system



Leveraging Past Projects

- Large scale data centers (e.g., multi-petabyte) at PNNL
 - Environmental Molecular Sciences Laboratory data archive.
 - DOE Atmospheric Radiation Measurement Data Management Facility
- Future Power Grid Initiative
 - Grid Optics Software System
 - Fusion of power grid information with contextual data



Research Plan

- Establish protocols for data access
- Draft initial system design requirements and specification for full scale system
- Develop a bench-scale version of the system testing key features of the PGDR
- Define suitable value added data products with industry



Bench-Scale System PGDR Features

- Test data cleaning
- Event detection methods
- Data integration methods
- Access control



Deliverables

Type	Title	Date
Internal	Confirm Utility Partnership	7/31/2015
Internal	Requirements document/specification	9/30/2015
External	Bench scale system to prototype PGDR	2/28/2016
External	Final Report	5/30/2016



Risks to Projects

- Working with external collaborators
- Curating data
 - Establishing quality of data
 - Tagging data with meta-data of phenomena captured
 - Safe guarding data



Possible Future Work

- Implement the full scale data repository as defined in the final report:
 - Recommendations
 - Specifications
 - Budget
- National power grid data center



Questions

